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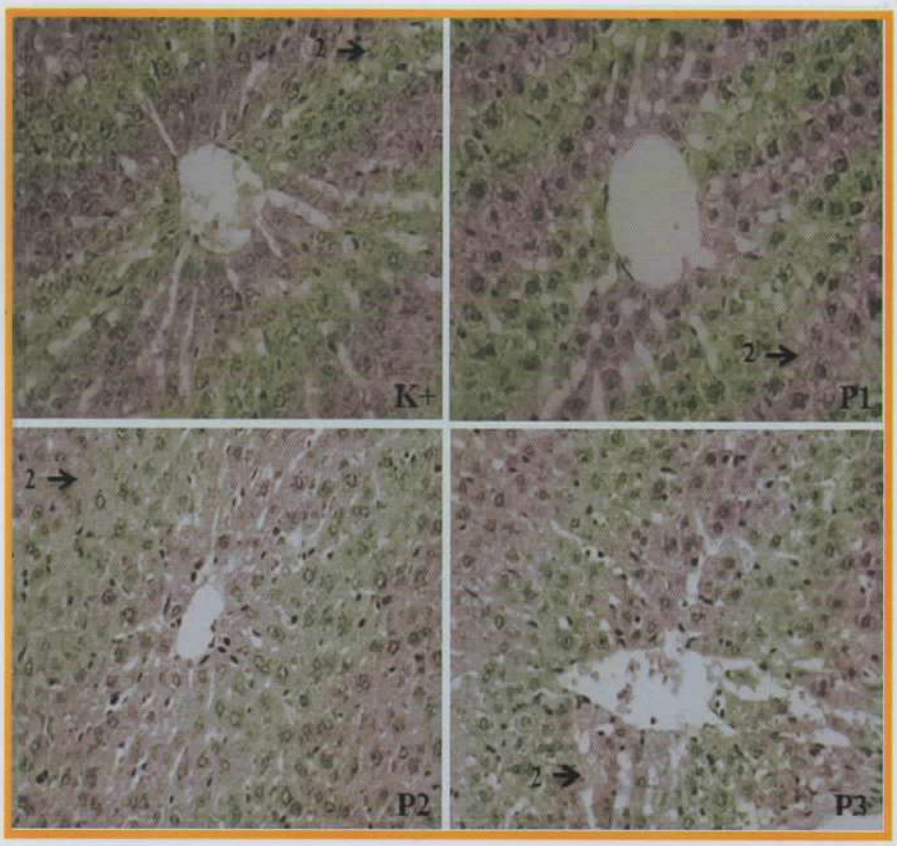

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DAFTAR ISI

EFFECTS OF PROPOLIS ON HISTOLOGY PROFILE OF KIDNEY IN MALE MICE *(Mus musculus)*

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ABSTRACT

The research aimed to determine the effect of propolis in The Histology in mice's kidney especially the tubulus and glomerulus. Twenty five male mice 12 weeks old were used as experimental animals were divided into five groups; so each group consisted of five mice. Group T0 served as control group, T1, T2, T3 and T4 respectively were treated orally with propolis ethanolic extract 0.4, 0.8, 1.6 and 3.2 mg each day and sacrificed after 14 days, Histology of tubulus and glomerulus were analyzed microscopically. The data were analyzed by Kruskall-Wallis test. The result showed there was no significant difference amongst group of mice ($p>0.05$), The conclusion is propolis does not have effect and safe for histological Kidney in male mice.

Key words : Propolis, Kidney , Histology

Introduction

Propolis is a natural product derived from plant resins collected by honeybees, Propolis has been used in folk medicine for centuries. It is known that propolis possesses anti-microbial, antioxidative, anti-ulcer and anti-tumor activities. Therefore, propolis has attracted much attention in recent years as a useful or potential substance tha can be used in medicine and cosmetic's products (Lotfy, 2014)

The propolis can be used to improve the pathological condition of the ill individual, works as an antioxidant and antibiotics as well as boosting the immune system both humoral and cellular because it contains flavonoids approximately 15 % (Krell, 2005) The content contained in propolis is very good for the body. One of the largest percentage content of propolis is the resin (flavonoids, terpenoids, polyphenols) that serves as an anti-bacterial, antiviral, anti-inflammatory effects, antioxidant, antimicrobial and other biological activities (Shuai et al, 2014). Shuai also stated that there some mineral that are considerable as a toxic, Adverse effects which have been reported due to high calcium intakes include the so-called milk-alkali syndrome, the formation of kidney stones in persons with a propensity for nephron-lithiasis, hypercalciuria and for hyper-absorption of calcium, and interference with the absorption of other minerals (Whiting and Wood, 1997). The RDAs (Recommended Dietary Allowances) has wide range depend on the age, gender and the condition of subject ranged from the lowest 200mg/day for 0 – 6 month old infant until 1300mg/day for 14 – 18 years old or lactating woman (NIH, 2013).

Material and Methods

The research conducted at Laboratory of Experimental Animals, Medical Faculty, Universitas Airlangga, Surabaya for the treatment of the animals and for the preparation of histology specimen conducted at Gedung Diagnostic Center (GDC) Dr.

Soetomo Hospital. The extraction of propolis done at Laboratory of Phytochemical, Faculty of Pharmacy, Surabaya University. And for the Histological examination done at Histology Lab, Faculty of Veterinary Medicine, Universitas Airlangga, Surabaya. Implementation of this research held on December 2014 until July 2015.

This is an experimental research to determine the effect of propolis on the kidney of mice with Completely Randomized Design. This research is using 5 groups, 1 control group and 4 treatment groups with simple randomized. Each unit of the treatment repeated 5 times. Examination process conducted by observing the changes that occurs in kidney by using post-test control method. Scoring done only during the post-test control, by comparing the results of observation between treatment group and control group, and also between the treatment groups.

Kidney Examination

Examination of Kidney especially at glomerulus and tubulus part of the speciment that have been stained by HE examined under the microscope with 100 - 400 times magnification.

Scoring method histological chang es in the kidney is determined according to the method Arsad *et al.*,(2014) Light microscopic examination of multiple tissue section from organ in all groups were performed in all groups and images representative of typical histological profile was examined. Changes in the experimental histopathological parameters include granular cast, cellular cast, protein cast, pycnotic cell, hydropic degeneration, for kidney tissues were graded as follows: (0) showing no changes, (1) mild changes (2) moderate changes (3) severe changes, respectively, while the grading was determined by percentage as follows: Changes less than 30% (<30%) showing mild changes, changes less than 30% - 50% (<30% - 50%) indicating moderate changes and changes more than 50% (>50%) showing severe changes

Data Analysis

The form of data obtained stated in scores of histological changes level in the kidney of mice that arranged in table for later staticticlly analyzed using the Kurskal-Wallis test. If there is real difference, then the analysing continue using Mann-Whitney test.

Result and Discussion

Results of the effect of propolis on histology of kidney in male mice *(Mus musculus)*in various histopathology parameters are as follows in Table 1.

From the data result of statistic test of Histoology observation after given propolis in various dose, using Kruskal-Wallis test showed that there were no significant differences ($p>0.05$) Among the treatments .

Conclusion and Sugestion

The result based on statistical analysis shows that the administration of propolis does not have effect on histological changes of kidney in male mice both on the lowest dose group (0.4mg/head/day) until the highest dose group (3.2mg/head/days) and even when compared with the control group, the results show that both tubulus and glomerulus is normal, while we might find a bit of necrosis in tubulus that mainly pycnotic, both of that result might have affected by the compund that propolis contain in this chase all the vitamin and mineral to help maintain the organ health but Shuai (2014) also stated that there some mineral that are considerable as a toxic, propolis contain resins such as flavonoids (Jaya *et al.,* 2005) and other substances that include vitamins such as vitamin A, B1, B2, B6, C, D, E and trace minerals such as calcium, magnesium, iron, copper, zinc (Farooqui and

Table 1. Histopathology Observation Scores

Histopathology Parameters	Group					Significance
	A	B	C	D	E	
Granular cast	0	0	0	0	0	1.00
Cellular cast	0	0	0	0	0	1.00
Protein cast	0	0	0	0	0	1.00
Pycnotic cell	0	0	0	0	0	1.00
Hydropic degeneration	0	0	0	0	0	1.00
Mean Score	0	0	0	0	0	1.00

Group A:T0 (Control); Group B: T1(Propolis 0.4 mg/0.5ml/day); Group C: T2(Propolis 0.8 mg/0.5ml/day); Group D: T3(Propolis 1.6 mg/0.5ml/day); Group E: T4(Propolis 3.2 mg/0.5ml/day)

Farooqui, 2010), the author suggest to continue the research on unhealthy animal.

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